Owner's Manual

REGENCY POWER WHEELCHAIR

MODEL: 7700

DANGER: ELECTROMAGNETIC INTERFERENCE (EMI) MAY CAUSE ERRATIC, UNINTENTIONAL OR UNCONTROLLED MOVEMENT OF A POWER WHEELCHAIR! READ AND FOLLOW THE INSTRUCTIONS AND SAFETY PRECAUTIONS IN THIS MANUAL BEFORE OPERATING EQUIPMENT.

THE SERIAL NUMBER WILL BE FOUND ON THE LOWER PART OF THE CHAIR FRAME. RECORD NUMBER BELOW:

SERIAL NUMBER: _____ DATE OF PURCHASE: _____

REGENCY XLC

by GENDRON

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CHAPTER 1: DESCRIPTION OF POWER WHEELCHAIR

1.0 Introduction

The Gendron Regency Power Wheelchair is a medium to heavy duty, rear wheel drive power wheelchair. This device provides a means of mobility for users with a body mass up to 364 kg. (800 lbs.) combined weight of patient and driver

The Regency Power Wheelchair consists of a seat & frame assembly, armrests, front casters and footrests. As a motorized wheelchair, the unit also consists of two motors with electric brakes, drive wheels, two 12 V. D.C. batteries and a controller with joystick.

The joystick is user interfaced. It transfers the commands of the user to drive the chair. When the user activates the joystick, the controller receives a signal to release the brakes. With the brake released, the chair is allowed to move in the direction the joystick is actuated. When the user releases the joystick, the chair slows to a stop and the brake is automatically re-engaged. The electric parking brakes allow the user to stop by letting go of the joystick.

If the chair loses power, the brakes are automatically engaged and the chair comes to a stop. To prevent the user from being stranded, the chair may be pushed. The parking brakes can be manually disengaged which allows the chair to be easily pushed by an attendant.

The Pilot + (LR80) joystick module used on the Regency Power Wheelchair was designed and developed to control the D.C. Drive System. The motors and batteries are connected to the power module, which contains all the control, monitoring, and switching circuitry necessary to drive a pair of brushed D.C. electric motors and control two solenoid-operated parking brakes. A data cable connects the power module to a control module, which contains a joystick and the electronics necessary to convert its signals into digital commands for the power module. The joystick module also contains a keypad, with an on-off switch and keys giving access to other controller functions. A standard XLR socket is provided on the joystick module for connection of the battery charger.

"Warning – Do <u>not</u> drive your wheelchair on slick or slippery surfaces of any kind."

CHAPTER 2: GENERAL WARNINGS AND PRECAUTIONS

WARNINGS

Heed all warnings in this section. If you fail to do so, a fall, tip over or loss of control may occur and cause severe injury to the user or others.

1.0 WEIGHT LIMIT

NEVER exceed the weight limit of 364 kg. (800) lbs. (model 7700), for combined weight of user, patient and items carried. Exceeding weight limit may cause the chair to fail.

2.0 TO REDUCE THE RISK OF AN ACCIDENT

2.1 BEFORE driving you should be trained in the safe use of a power chair by your health care professional.

2.2 Get to know the areas where you plan to use your chair. Look for hazards and learn how to avoid them.

2.3 Avoid a hard shock such as striking a curb. If this does occur, the vehicle should be stopped and inspected for damage. Any damage should be repaired before restarting and operating the equipment.

3.0 REACHING OR LEANING

If you reach or lean, it will affect the center of balance of your chair. This may cause you to fall or tip over. When in doubt, ask for help or use a device to extend your reach.

3.1 NEVER reach or lean if you must shift your weight sideways or rise up off the seat.

3.2 NEVER reach or lean if you must move forward in your seat to do so. Always keep your buttocks in contact with the backrest.

3.3 NEVER reach with both hands (you may not be able to catch yourself to prevent a fall if the chair tips.)

4.0 CENTER OF BALANCE

The point where this chair will tip forward, back or to the side depends on its center of balance and stability. How your chair is set up, the options you select and the changes you make may affect the risk of a fall or tip over.

WARNINGS

4.1 THE CENTER OF BALANCE IS AFFECTED BY:

a. A change in the seat height of your chair by adding a seat cushion.

b. Changes in your body position, posture or weight distribution.

c. Driving your chair on a ramp or slope.

d. The use of a back cushion insert, or the amount or location of added weight.

4.2 TO REDUCE THE RISK OF AN ACCIDENT:

a. Consult your doctor, nurse, therapist or your authorized supplier BEFORE you modify or adjust this chair. You may need to make other changes to correct the center of balance.

b. Use the anti-tip wheels that were supplied with your chair.

5.0 ENVIRONMENTAL CONDITIONS

5.1 Contact with water or excess moisture may cause your chair to rust, corrode or cause your joystick control not to function.

5.2 Do not store or use your chair in a hot or cold environment (Below 35º F or above 110º F).

6.0 TRANSFERS

It is dangerous to transfer on your own. It requires good balance and agility.

To Avoid A Fall:

6.1 Work with your health care professional to learn safe methods of transfer.

a. Learn how to position and support yourself during a transfer.

b. Until you know how to do a safe transfer on your own, get help.

6.2 Before you transfer, turn the power off on your joystick. This locks the brakes and keeps the rear wheels from rolling. However, this will not keep your chair from sliding away from you or tipping.

6.3 Move your chair as close as you can to the bed or seat and use a transfer board.

6.4 Move or swing footrests out of the way. Make sure your feet do not catch in the space between the footrests.

6.5 Avoid putting weight on the footrests as this may cause the chair to tip. Armrests must be moved out of the way.

6.6 Transferring as far back in the seat surface as possible will reduce the risk that the chair will tip or move.

7.0 RAMPS, SLOPES or HILLS

Driving on a slope, ramp or hill will change the center of balance of your chair. Your chair is less stable when it is at an angle. Anti-tip tubes may not prevent a fall or tip over. Use extreme caution when going up or down ramps, slopes, or hills.

7.1 Do not use your chair on a slope grade steeper than 10%. (A 10% slope grade means one foot in elevation for every ten feet of slope length. See page 34.)

7.2 Always go as straight up and as straight down as you can. (Do not "cut the corner" on a ramp, slope, or hill.)

7.3 Do not turn or change direction on a ramp, slope, or hill.

7.4 Always stay in the CENTER of a ramp. Make sure ramp is wide enough to avoid the risk of a fall or tip over.

7.5 Do not stop on a incline. If you attempt to stop, you may lose control of your chair.

7.6 NEVER attempt to climb inclines covered with water, ice, an oil film, or other foreign objects. Unexpected loss of control may occur, resulting in personal injury or equipment damage.

7.7 To Reduce The Risk Of A Fall Or Tip Over:

a. Do not operate your chair on wet or slippery surfaces.

b. Beware of a change in grade on an incline (or a lip, bump or depression). These may cause a fall or tip over.

c. Watch for a drop-off at the bottom of a slope or hill. A drop-off as small as ¾ inch can stop a front caster and cause the chair to tip forward.

d. Lean your body UPHILL. This will help adjust for the change in the center of balance caused by the slope or hill.

e. If you go too fast, on a down slope or hill you may lose control.

f. NEVER go down a slope or hill backwards. A fast stop in reverse may also lift the front wheels.

8.0 Obstacles

Obstacles and road hazards (such as potholes and broken pavement) can damage your chair and may cause a fall, tip over or loss of control. To avoid these risks:

8.1 Keep a lookout for danger – scan the area well ahead of your chair as you drive.

8.2 Make sure the floor areas where you live and work are level and free of obstacles.

8.3 Remove or cover threshold strips between rooms.

8.4 Install a ramp at entry or exit doors. Make sure there is not a drop off at the top or bottom of the ramp.

8.5 To Help Correct Your Center Of Balance:

a. Lean your upper body FORWARD slightly as you go UP over an obstacle.

b. Press your upper body BACKWARD as you go DOWN from a higher to a lower level.

8.6 Keep anti-tip wheels in place at all times.

9.0 TERRAIN

9.1 Your chair is designed for use on firm, even surfaces such as concrete, asphalt and indoor floors and carpeting.

9.2 Do not operate your chair in sand, loose soil or over rough terrain. This may damage wheels or axles or loosen fasteners of your chair.

9.3 Avoid holes in the terrain, drop-offs and other hidden hazards.

9.4 Do not drive your chair on a wet or slick surface.

10.0 CURBS, STEPS, STAIRS OR ESCALATOR

10.1 Do not try to climb or descend a curb or step.

10.2 NEVER use this chair on stairs or escalator, even with an attendant. If you do, a fall or tip over is likely.

11.0 STREET USE

WARNINGS

In most states, wheelchairs are not legal for use on public roads. Be alert to the danger of motor vehicles on roads or in parking lots.

12.0 MOTOR VEHICLE SAFETY

Wheelchairs do not meet federal standards for motor vehicle seating.

12.1 NEVER let anyone sit in this chair while in a moving vehicle.

12.2 ALWAYS move the rider to an approved vehicle seat.

12.3 ALWAYS secure the rider with proper motor vehicle restraints.

12.4 This chair is heavy and should never be loaded into an automobile. (Use a van or truck to transport chair.)

13.0 ARMRESTS

Armrests detach and will not bear the weight of this chair.

13.1 Never lift this chair by its armrests. They may come loose or break.

13.2 Lift this chair only by non-detachable parts of the main frame.

13.3 Make sure armrests are locked in position before entering or exiting chair.

14.0 CUSHIONS

14.1 Standard foam cushions are not designed for the relief of pressure.

15.0 FASTENERS

Many of the screws, bolts and nuts on this chair are special high-strength fasteners. Use of improper fasteners may cause your chair to fail.

15.1 ONLY use fasteners provided by an authorized Gendron dealer.

15.2 Over or under-tightened fasteners may fail or cause damage to chair parts.

15.3 If bolts or screws become loose, properly tighten them immediately.

16.0 FOOTRESTS

16.1 At the lowest point, footrests should be AT LEAST 2 ½ INCHES off the ground. If set too LOW, they may “hang up” on obstacles you can expect to find in normal use. This may cause the chair to stop suddenly and tip forward.

WARNINGS

16.2 To Avoid A Trip Or Fall When You Transfer:

a. Make sure your feet do not “hang up” or get caught in the space between the footrests.

b. Avoid putting weight on the footrests, as the chair may tip forward.

c. Remove, slide, or swing the footrests out of the way, if possible.

16.3 NEVER lift this chair by the footrests. Footrests detach and will not bear the weight of this chair. Lift this chair only by non-detachable parts of the main frame.

16.4 Heel loops are available for assisting in keeping feet from slipping off footplates.

17.0 MODIFIED SEAT SYSTEMS

Use of a seat system not approved by Gendron may alter the center of balance of this chair. This may cause the chair to tip over.

17.1 Do not change the seat system of your chair UNLESS you consult your authorized Gendron supplier.

18.0 UPHOLSTERY FABRIC

18.1 Replace worn or torn fabric of seat and back as soon as you can. If you fail to do so, the seat may fail.

18.2 Fabric may weaken with age and use. Look for fraying or thin spots or stretching of fabric at corners.

18.3 “Dropping down” into your chair will weaken fabric and result in the need to inspect and replace seat more often.

18.4 Be aware that laundering or excess moisture will reduce flame retardation of the fabric.

19.0 POSITIONING BELT

Use positioning belts ONLY to help support the user’s posture. Improper use of these belts may cause severe injury to or death of the rider.

19.1 Make sure the user does not slide down in the wheelchair seat. If this occurs, the rider may suffer chest compression or suffocate due to pressure from the belts.

WARNINGS

19.2 The belts must be snug, but must not be so tight that they interfere with breathing. You should be able to slide your open hand, flat, between the belt and the user.

19.3 A pelvic wedge or a similar device can help keep the user from sliding down in the seat. Consult with the user's doctor, nurse or therapist to find out if the device is needed.

19.4 Use positioning belts only with a user who can cooperate. Make sure the user can easily remove the belts in an emergency.

19.5 NEVER use positioning belts as a patient restraint.

20.0 ELECTROMAGNETIC INTERFERENCE

DANGER: ELECTROMAGNETIC INTERFERENCE (EMI) MAY CAUSE ERRATIC, UNINTENTIONAL OR UNCONTROLLED MOVEMENT OF A POWERED WHEELCHAIR! READ AND FOLLOW INFORMATION CAREFULLY BEFORE OPERATING THE CHAIR.

20.1 What can I do to reduce the risk that my powered wheelchair could be affected by EMI?

Here are some precautions you can take:

1) Do not turn **ON** or use hand-held personal communication devices, such as citizens band (CB) radios or cellular phones, while the powered wheelchair is **ON**.

2) Be aware of nearby transmitters, such as radio or TV stations and hand-held or mobile two-way radios, and try to avoid coming close to them.

3) Be aware that adding accessories or components, or modifying the power wheelchair, may make it more susceptible to interference from radio wave sources. (**NOTE:** There is no easy way to evaluate their impact or effect on the overall immunity of the power wheelchair).

20.2 What should I do if my power wheelchair moves unexpectedly?

If unintended motion or brake release occurs, turn the power wheelchair **OFF** as soon as it is safe.

20.3 If my power wheelchair moves unexpectedly, where should I report this?

WARNINGS

Gendron knows of no incidents of EMI with a Regency Power Wheelchair. However, if you believe you have experienced an unintended motion of your power wheelchair you should report the incident immediately to Gendron Customer Service at 1-800-537-2521.

21.0 ELECTRIC PARKING BRAKES

21.1 When parking brakes are disengaged, there is absolutely no braking. The disengaged position should only be used on a level surface when manually pushing the wheelchair.

21.2 Make certain both BRAKE LEVERS are either engaged or disengaged at all times. Otherwise, a dangerous steering situation may result when brakes are applied.

21.3 Disengage brakes **ONLY** when manually pushing the chair. Joystick must be in off position.

21.4 If chair turns to one side when backing, check disengaging lever. Consult dealer if problem persists.

CHAPTER 3: SET UP

1.0 BATTERY SELECTION

Batteries are not included as standard equipment with the chair. Purchase batteries locally through your dealer. Use only “Deep Cycle” Gel-Cell batteries as specified in the back of this manual.

2.0 BATTERY CONNECTION

2.1 After you have selected your batteries, connect your battery cables, as shown below:

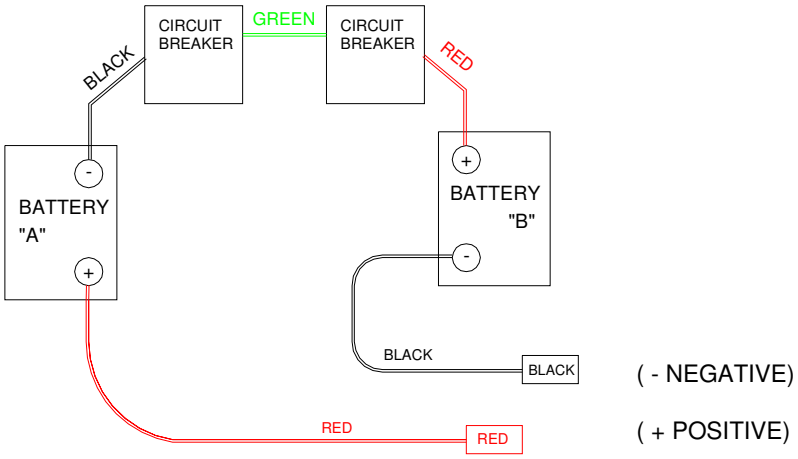


Figure 1. Battery Cable Connection

CAUTION: DO NOT SHORT BATTERY TERMINALS. Before installing battery, remove all metal bracelets, wristwatch bands, rings, etc. Positive terminal should be connected first to prevent sparks from accidental grounding. At no time should any wires be allowed to touch one another. All connections must be tight.

2.2 Position battery cables so they will not be pinched when the battery case top is installed.

2.3 Place the top of the battery case on the lower half of battery case and wrap the straps across the lid to fasten.

3.0 POWER MODULE

3.1 Connect motors and communications cables as shown below**:**

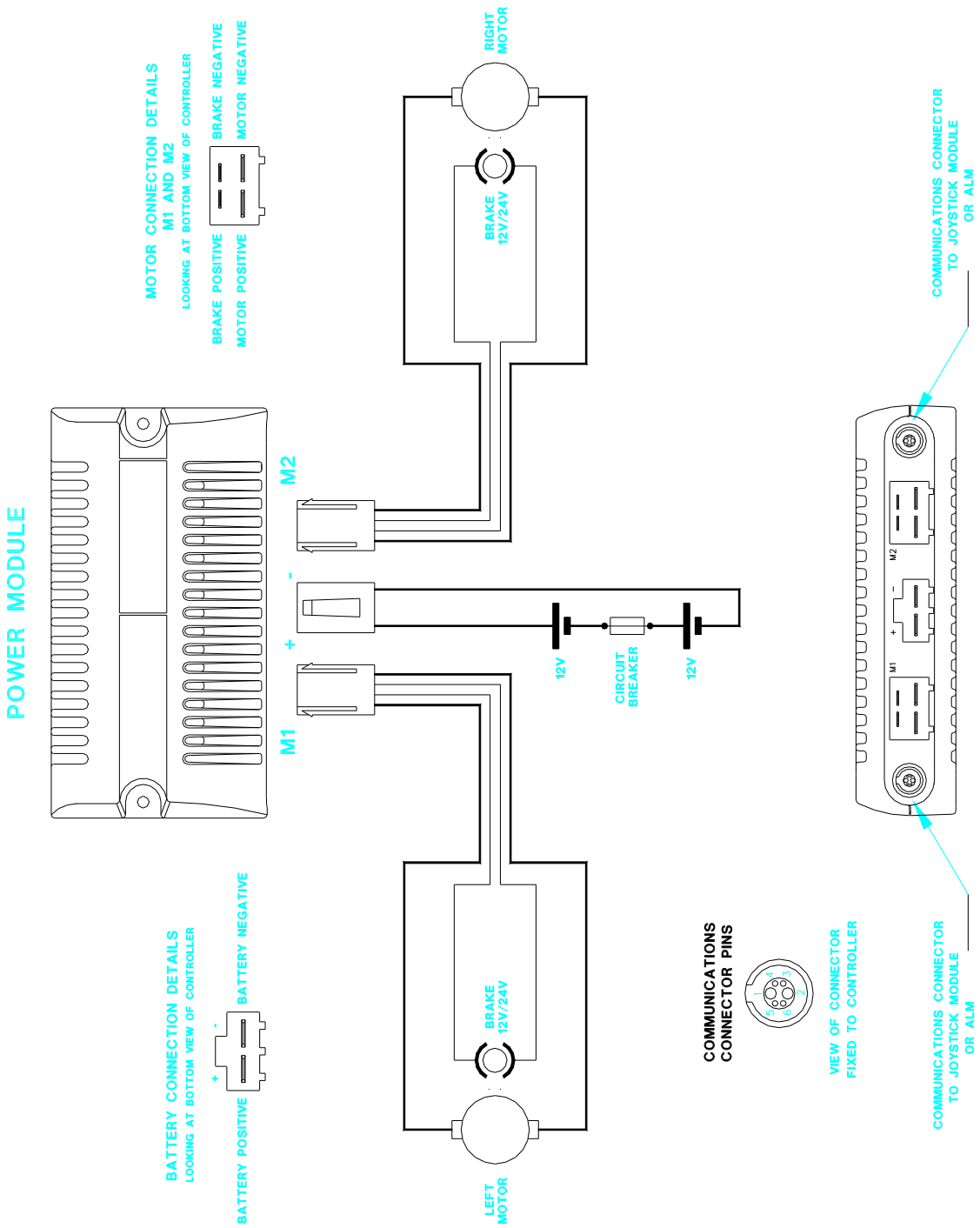


Figure 2. Power Module Connection Diagram

4.0 ARMREST

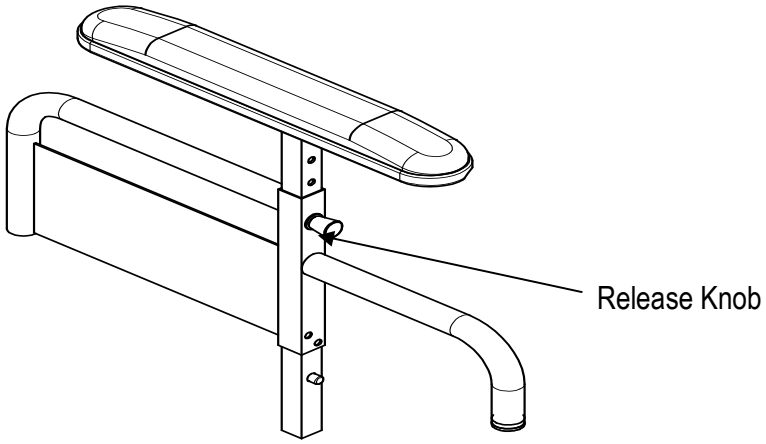


Figure 3. Height Adjustable Armrest Assembly

5.0 Front Riggings

WARNING - Do not stand on footplates when entering or exiting the chair; fold footplates in an upright position, slide to the side.

5.1 All footrests and elevating legrests are length adjustable. A simple through-bolt provides quick and easy adjustments. Heel loops are optional to keep patient's feet from slipping off footrest and under wheelchair.

5.2 Hook-on Footrests – To unlatch footrest push lever back and then lift up on footrest to remove. This will permit easy entrance and exit to chair.

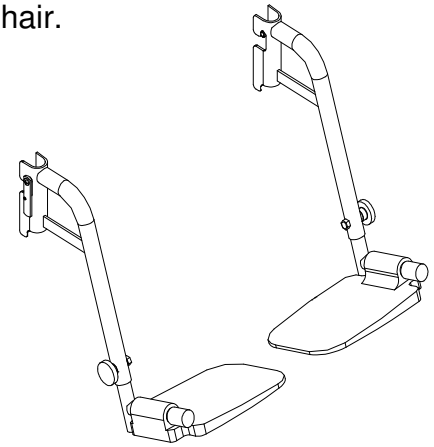


Figure 4. Hook-on & Footrest Adjustment.

If you encounter any problems, see front page for phone number and address for customer service.

CHAPTER 4: OPERATION

1.0 Introduction

The operation of the Pilot+ wheelchair control system is simple and easy to understand. The control system incorporates state-of-the-art electronics, the result of many years of research, to provide you with ease of use and a very high level of safety. In common with other electronic equipment, correct handling and operation of the unit will ensure maximum reliability.

Please read this chapter carefully - it will help you to keep your wheelchair reliable and safe.

2.0 General

A Pilot+ control system is comprised of two modules - Joystick Module, Power Module and Actuator. Figure 1 below shows the modules and the connections between them.

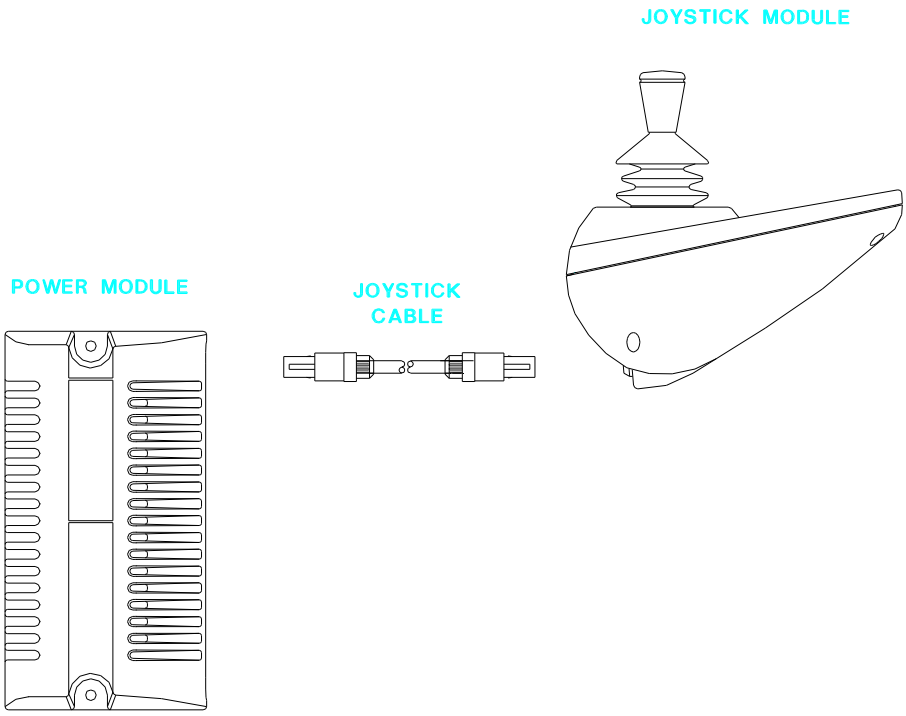


Figure 1. Joystick Module, Power Module Connection Diagram

2.1 Handling

Avoid bumping your joystick control system. Be careful not to strike obstacles with the joystick control system when you drive. Never drop the joystick control system.

When transporting your wheelchair, make sure that the joystick control system is well protected. Avoid damage to cables.

2.2 Operating Conditions

Your control system uses industrial-grade components throughout, ensuring reliable operation in a wide range of conditions. However, you will improve the reliability of the control system if you keep exposure to extreme conditions to a minimum.

Do not expose your control system or its components to dampness for prolonged periods. If the control system becomes contaminated with food or drink, clean it off as soon as possible.

3.0 Controls

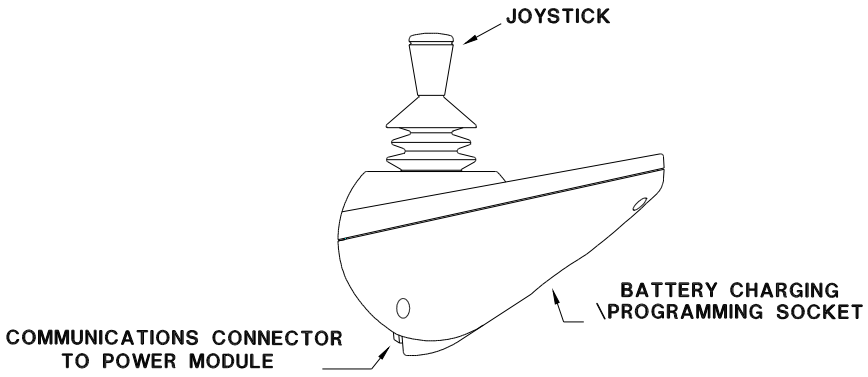
3.1 On/Off Switch and Battery Gauge

The on/off switch applies power to the control system electronics, which in turn supply power to the wheelchair's motors. Do not use the on/off power switch to stop the wheelchair unless there is an emergency. (If you do, you may shorten the life of the wheelchair drive components).

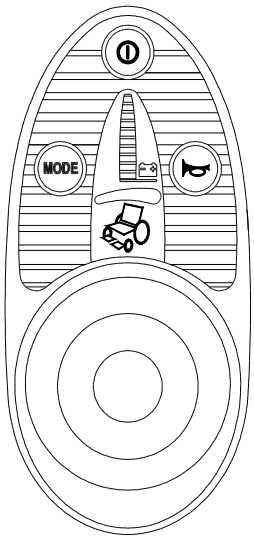
The battery gauge shows you that the wheelchair is switched on. It also indicates the operating status of the wheelchair. Details are given in chapter 4 section 8.0.

When the wheelchair is switched on, each of the LEDs on the Joystick Module will briefly illuminate. If any of the LEDs do not illuminate, contact your service agent.

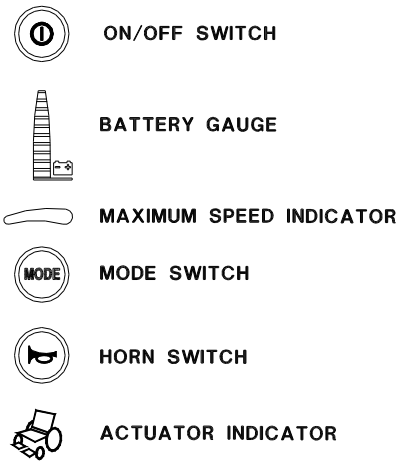
Figure 2
Joystick Module Details



Joystick Module without Lighting



Controls



3.2 Joystick

The joystick controls the speed and direction of the wheelchair. The further you push the joystick from the center position, the faster the wheelchair will move. When you release the joystick, the brakes are automatically applied.

3.3 Maximum Speed Indicator

This is a gauge that shows the maximum speed setting of the wheelchair. There are five speed settings - step 1 is the lowest speed and step 5 is the highest speed. For details of how to change the maximum speed setting, see section 3.4 below.

3.4 Mode Switch

The mode switch is used to make maximum speed changes and to change between wheelchair operation modes.

If the mode switch is pressed while you are driving, the maximum speed setting will be increased by one step. Each successive operation of the mode switch will increase the setting, when the setting is at 5 the next mode switch operation will put the setting to 1. The diagram below explains this action.

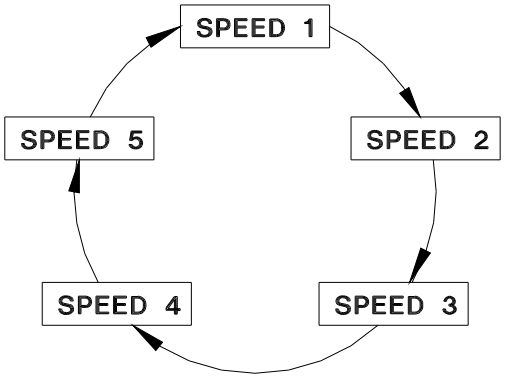


Fig. 3 Operation of Mode Switch While Driving

If the mode switch is pressed when the joystick is centered, the control system operation mode will be changed. There are three modes - drive, speed adjustment and actuator adjustment. The diagram below explains this action.

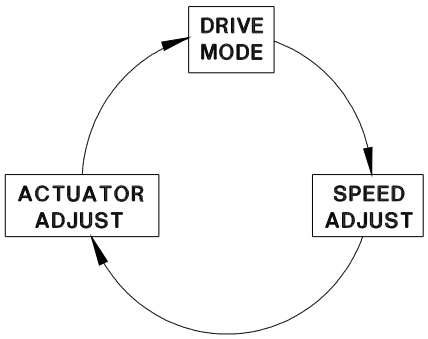


Figure 4. Operation of Mode Switch With Joystick Centered

3.4.1 Speed Adjustment Mode

When the control system is in this mode, the maximum speed indicator will flash. The maximum speed can be adjusted by left or right movements of the joystick. Left will decrease the speed setting and right will increase it. Forward or reverse movements of the joystick will take you back into drive mode.

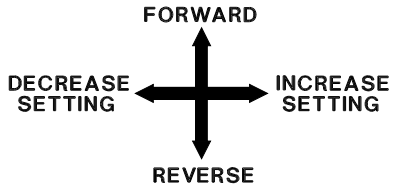


Figure 5. Joystick Operation in Speed Adjustment Mode

Depressing the mode switch will put the control system back into drive mode.

3.5 Horn Switch

The horn will sound while the switch is depressed.

4.0 Getting Ready to Drive

Depress the on/off switch. The battery gauge will blink and then turn on after a second.

Check that the maximum speed control is set to a level that suits you.

Push the joystick to control the speed and direction of the wheelchair.

Please note that if you push the joystick before or just after you switch the control system on, the battery gauge will ripple up and down and the wheelchair will not be allowed to move. You must release the joystick to resume normal operation. If you do not release the joystick within five seconds, the wheelchair will not be able to move

even if you release the joystick and push it again. The battery gauge will then flash rapidly. You can reset this condition by switching the control system off and on again.

If you do not push the joystick as you switch the wheelchair on and the battery gauge flashes rapidly, then there may be a fault. Refer to chapter 4 section 8.4 for details.

5.0 Tips for Using Your Control system

5.1 Driving - General

Make sure that the control system is mounted securely and that the joystick position is correct. The hand or limb you use to operate the joystick should be supported. Do not use the joystick as the sole support for your hand or limb - wheelchair movements and bumps could upset your control.

5.2 Driving Technique

The control system interprets your joystick movements and produces appropriate movements of your wheelchair. You will need very little concentration to control the wheelchair, which is especially useful if you are inexperienced. One popular technique is to simply point the joystick in the direction you want to go. The wheelchair will "home-in" on the direction you push the joystick.

The further you push the joystick away from the rest position, the faster the wheelchair will go.

The intelligent speed control system minimizes the effects of slopes and different types of terrain.

6.0 Precautions for Use

Note: In the event of the wheelchair moving in an unexpected way, release the joystick. This action will stop the wheelchair under any circumstances.

6.1 Hazards

Do not drive the wheelchair:

i) beyond restrictions indicated in this user manual, for example maximum inclines, curb height etc.

ii) in places or on surfaces where a loss of wheel grip could be hazardous, for example on wet grassy slopes.

iii) if you know that the control system or other crucial components require repair.

WARNING: Although the Pilot+ control system is designed to be extremely reliable and each unit is rigorously tested during manufacture, the possibility of a system malfunction always exists (however small the probability). Under some conditions of system malfunction, the control system must (for safety reasons) stop the chair instantaneously.

It is recommended by Gendron that a seat belt be purchased and used at all times when the wheelchair is in motion. Gendron, Inc. accepts no liability for losses of any kind arising from the unexpected stopping of the wheelchair, or arising from the improper use of the wheelchair or control system.

7.0 Safety Checks

The electronic circuits in your control system have been designed to be extremely safe and reliable. The on-board microcomputer carries out safety checks at up to 100 times per second. To supplement this safety monitoring, you should carry out the following periodic checks.

7.1 Daily Checks

Joystick: With the control system switched off, check that the joystick is not bent or damaged and that it returns to the center when you push and release it. If there is a problem, do not continue with the safety checks and contact your service agent.

7.2 Weekly Checks

Solenoid (parking) brake: This test should be carried out on a level floor with at least 40 inches of clear space around the wheelchair.

i) Switch on the control system.

ii) Check that the battery gauge remains on, or flashes slowly, after one second.

iii) Push the joystick slowly forwards until you hear the parking brakes (click) operate. The chair may start to move.

iv) Immediately release the joystick. You must be able to hear each parking brake operate (click) within a few seconds.

v) Repeat the test three more times, pushing the joystick slowly backwards, left and right.

Cables & Connectors: Check the condition of all cables and connectors for damage. Make sure that all connectors are securely mated. The communication cable from joystick to controller has “push pull” connectors with tabs for proper engagement. **Do not twist**!

Joystick gaiter: Check the thin rubber gaiter or boot, around the base of the joystick shaft, for damage or splitting. Check visually only; do not handle the gaiter.

Mounting: Make sure that all the components of the control system are securely mounted. Do not overtighten any securing screws.

If the control system fails any of these checks, do not use the wheelchair and contact your service agent.

7.3 Servicing

To ensure continued satisfactory service, we suggest you have your wheelchair and control system inspected by your service agent after a period of 3 months from commencement of service. Contact your service agent for details when the inspection is due.

8.0 Status Indication

The battery gauge will indicate the status of the control system.

8.1 Battery Gauge Steady

This indicates that all is well.

8.2 Battery Gauge Flashes Slowly

The control system is functioning correctly, but you should charge the battery as soon as possible.

8.3 Battery Gauge Blinks Once Every 2.5 Seconds

The control system has “gone to sleep” because the joystick has not been operated for a period of time. To re-start, switch the system off and on again.

8.4 Battery Gauge Flashes Rapidly (even with the joystick released)

The control system safety circuits have operated and the control system has been prevented from moving the wheelchair.
This indicates that there is a fault. Please follow this procedure:

i) Switch off the control system.

ii) Make sure that all connectors on the wheelchair and the control system are mated securely.

iii) Check the condition of the battery. If you can't find the problem, try using the self-help guide given in chapter 4 section 8.5.

8.5 Self-Help Guide

If a fault occurs, you can find out what has happened by counting the number of bars that are flashing on the battery gauge.

Here is a list of self-help actions. Try to use this list before contacting your service agent. Go to the number in the list that matches the number of flashing bars and follow the instructions.

1 bar: The battery needs charging or there is a bad connection to the battery. Check the connections to the battery and check the Power Module battery connector. This is the 2-pole connector situated between the two motor connectors. If the connections are good, try charging the battery.

2 bars: The left-hand motor has a bad connection. Make sure that the motor is connected properly and the Power Module connector M1 is secure.

3 bars: The left-hand motor has a short circuit to a battery connection. Contact your service agent.

4 bars: The right hand motor has a bad connection. Make sure that the motor is connected properly and the Power Module connector M2 is secure.

5 bars: The right hand motor has a short circuit to a battery connection. Contact your service agent.

6 bars: The battery charger is preventing the control system from driving the wheelchair. Disconnect the charger from the wheelchair.

7 bars: A Joystick Module fault is indicated. Make sure that the joystick is in the rest position before switching on the control system.

8 bars: A Power Module fault is indicated. Make sure that all Power Module connections are secure.

9 bars: The parking brakes have a bad connection. Check the parking brake and motor connections. Make sure the control system connections are secure.

10 bars: An excessive voltage has been applied to the control system. This is usually caused by a poor battery connection. Check the battery and Power Module connections.

Switch on the control system again and try to drive the wheelchair. If the safety circuits operate again, switch off and do not try to use the wheelchair. Contact your service agent.

9.0 Battery Gauge

The battery gauge is included to let you know how much charge is left in your batteries. The best way for you to use the gauge is to learn how it behaves as you drive the wheelchair. Like the fuel gauge in a car, it is not completely accurate, but it will help you avoid running out of "fuel".

The battery gauge works in the following way:

When you switch on the control system, the battery gauge shows an estimate of the remaining battery charge.

The battery gauge gives you a more accurate reading about a minute after you start driving the wheelchair.

Note: When you replace worn out batteries, fit the type recommended in this manual. If you use another type, the battery gauge may be inaccurate.

The amount of charge in your batteries depends on a number of factors, including the way you use your wheelchair, the temperature of the batteries, their age and the way they are made. These factors will affect the distance you can travel in your wheelchair. All wheelchair batteries will gradually lose their capacity as they age.

The most important factor that reduces the life of your batteries is the amount of charge you take from the batteries before you recharge them. Battery life is also reduced by the number of times you charge and discharge the batteries. To make your batteries last longer, do not allow them to become completely flat. Always recharge your batteries promptly after they are discharged.

If your battery gauge reading seems to fall more quickly than usual, your batteries may be worn out.

9.1 How to Read a TruCharge Battery Gauge

If the battery gauge shows red, yellow and green, the batteries are charged. If the battery gauge shows just red and yellow, then you should charge the batteries as soon as you can.

If the battery gauge shows just red, either steady or flashing slowly, then you should charge the batteries immediately.

10.0 Battery Charging

Caution – when charging batteries, low level radio noise or static may occur.

Before charging batteries, make sure Power button on Joystick is turned OFF. To begin charging the wheelchair batteries, make sure the charger wire is plugged into the battery-charging socket on the Joystick Module. When the batteries are charging, it is UNSAFE to operate the wheelchair. Plug the battery charger power wire into a wall outlet socket. A red indicator will light up on the charger signaling power, and an orange indicator will light up signaling charging. When the orange light changes color to green, the charging process is complete. Unplug the power cord from the wall outlet, wind the cord on the wheelchair wire wrap and wheelchair operation can continue. (For further information, see Battery Maintenance Section page 31.)

WARNING: Use only the battery charger that has been supplied with your wheelchair The use of incorrect chargers could damage the batteries, wheelchair or charger itself.

11.0 Control Adjustment

If you cannot find a speed control, turning control or response setting that suits you, the control system can be programmed to meet your needs. Your authorized Gendron dealer can make these adjustments.

WARNING: Gendron, Inc., accepts no liability for losses of any kind arising from unauthorized opening, adjustment or modifications to the Pilot+ control system.

WARNING: Adjustments to the controller should only be conducted by an authorized Gendron dealer with in-depth knowledge of the electronic control systems. Incorrect adjustments could result in an unsafe set-up of a wheelchair for a user. Gendron, Inc. accepts no liability for losses of any kind if the adjustments of the control system are altered from factory pre-set values.

12.0 Manual Operation

Make certain power is turned OFF at the joystick.

The parking brakes on your power chair can be disengaged so your power chair can be pushed manually. To disengage the brakes, rotate the levers on both drive units to disengage position as shown in Figure 7 below.

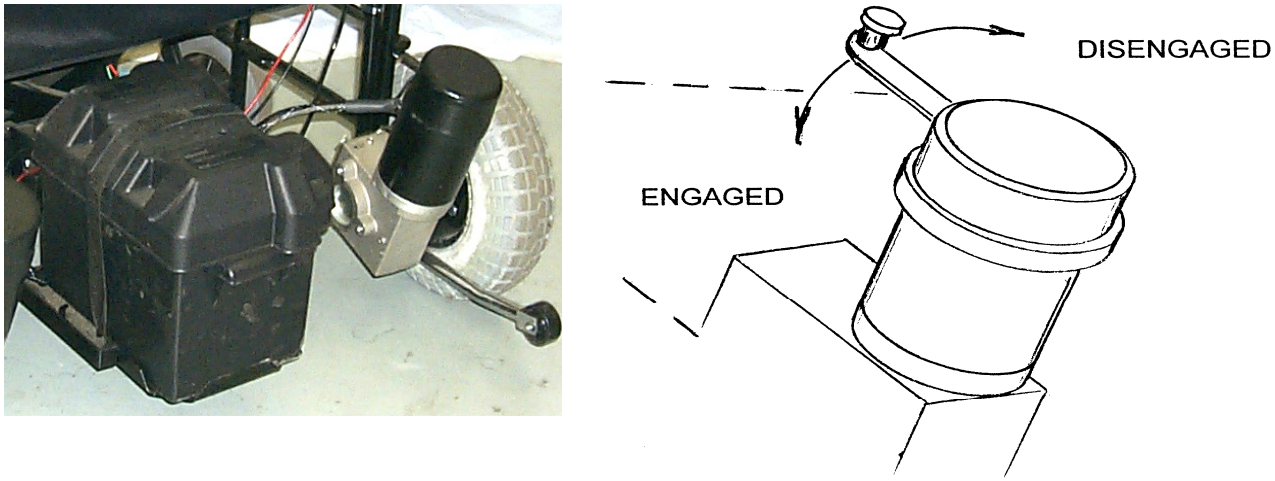


Figure 7. Brake disengagement

13.0 Servicing

All repairs and servicing must be carried out by authorized service personnel. Any unauthorized adjustments or modifications will invalidate any warranty and may result in hazards to you or other people

CHAPTER 5: MAINTENANCE & TROUBLE SHOOTING

WARNINGS!

If you fail to heed these warnings, your chair may fail and cause severe injury to the user or others.

- **Inspect and maintain this chair as shown in the maintenance chart as shown on page 31.**
- **If you detect a problem, service or repair the chair before use as directed in this manual.**
- **At least once every 3 months, have a complete inspection, safety check and service of your chair made by an authorized Gendron dealer.**

1.0 INTRODUCTION

Proper maintenance will improve performance and extend the useful life of your chair.

Clean your chair regularly. This will help you find loose or worn parts and make your chair easier to use.

Repair or replace loose, worn, bent or damaged parts.

To protect your investment, have all maintenance and repair work done by an authorized Gendron dealer.

2.0 MAINTENANCE TIPS

2.1 Monthly Checks-All nuts, bolts, screws, rivets, tires, wheels and upholstery should be checked each month for wear. If the end user is unable to perform the required inspection, return the unit to a qualified Gendron dealer for proper maintenance.

2.2 Tires-Worn tires will make your wheelchair difficult to operate. Both wheels should be replaced at the same time to prevent chair from pulling to one side.

2.3 8" Casters-Wheel is secured to the caster fork by an axle bolt and nut. To adjust, rotate bolt and lock with nut. Wheel should be snug but free spinning. If the caster flutters or shimmies, remove the caster cap. Adjust the locknut located under the caster cap. Take-up all play. Back off about ¼ turn. Replace caster cap. If proper adjustment cannot be made, replace bearings and stem with authorized Gendron parts.

Caution-Excessive bearing wear will result if wheels are too tight or too loose. Improper adjustment will cause premature failure of bearings and axle bolts.

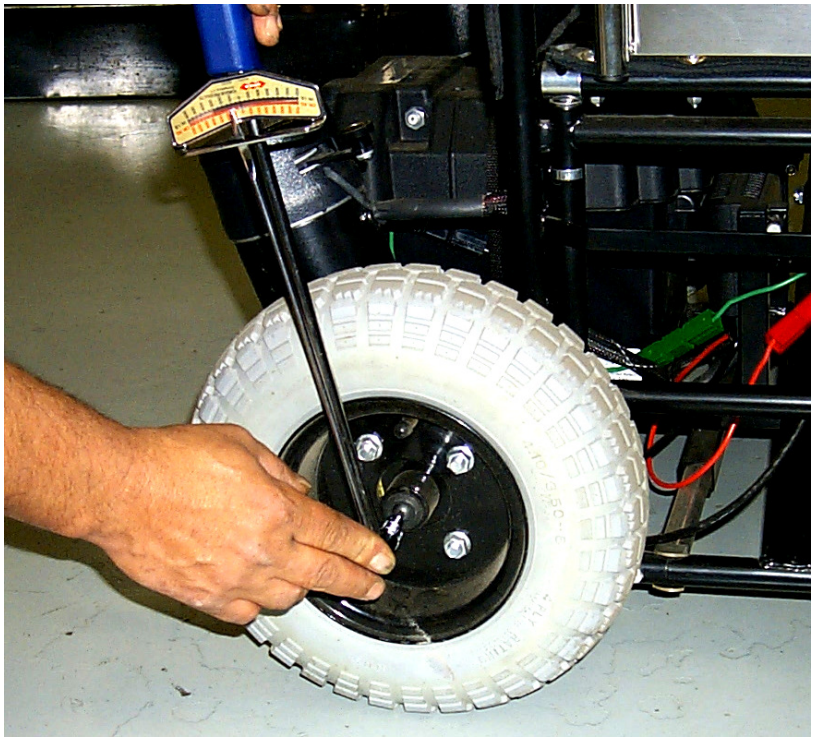


Figure 1. Drive Wheel Maintenance

2.4 13" Rear Drive Wheels-Secure self locking cap screw by tightening to 375 ± 10 in. lb. with a torque wrench. Check screws at least once a month. Replace self locking screw with Gendron part number P42713 after each removal. Do not reuse. The tires are foam-filled. Do not attempt to inflate with air.

2.5 Lubrication - All bearings are lubricated and sealed at the factory for life. Gearboxes are lubricated with "Chevron Black Pearl Grease."

2.6 Cleaning - All components on your wheelchair can be cleaned with warm water and mild detergent. Wipe dry immediately with a soft clean cloth. Do not use high-pressure water spray, abrasive or spirit based cleaners to clean your wheelchair.

2.7 Seat and back upholstery – Only premium grade nylon fabric is used. Replace immediately if upholstery is ripped. To ensure comfort and uniform appearance, both seat and back upholstery should be replaced together.

Warning - Laundering or moisture may reduce flame retardancy of upholstery. Laundering may reduce the load rating of upholstery.

3.0 BATTERY MAINTENANCE

Batteries should be regarded as energy reservoirs similar to gasoline tanks on automobiles. For proper function, batteries must have the proper amount of energy (fuel) supply. The battery gauge on the joystick control will show how much running time is remaining. (See chapter 4 section 8.0 in this manual.)

WARNING: Running your POWER WHEELCHAIR with discharged batteries may cause the unit to operate erratically. Under continuous use, with fully charged batteries, and total weight capacity, 364 kg. (800 pounds), battery power will last approximately 90 minutes.

Charge your batteries every night. A twelve-hour charge with the charger provided with your POWER WHEELCHAIR will usually be sufficient.

Frequent, long, and slow charges will yield a longer battery life than short fast charges.

Caution – When charging batteries, low level radio noise or static may occur. Always charge batteries in a well-ventilated room away from open flames, sparking devices, radios, televisions, or other electrical devices.

MAINTENANCE CHART

Check:	Weekly	3 months	6 months
Brakes	✔		
All fasteners for wear and tightness		✔	
Armrests			✔
Axles & Axle Bolts		✔	
Wheels & Tires		✔	
Casters		✔	
Anti-tip Wheels		✔	
Frame			✔
Upholstery		✔	
Lubricate Gearbox Recommended Lubricant: “Chevron Black Pearl Grease”			✔
Service by Authorized Gendron Supplier		✔	

4.0 STORAGE TIPS

Store your chair in a clean, dry area. If you fail to do so, parts may rust or corrode and/or cause damage to controller.

Before each use, make sure your wheelchair is in proper working order. Inspect and service items according to the "Maintenance Chart" on page 32.

If stored for more than three months, disconnect batteries and have your chair inspected by an authorized Gendron dealer before use.

5.0 TROUBLESHOOTING

TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE/REMEDY
Will not move	Check battery voltage. Check wire connections and circuit breakers. Make sure charger is unplugged.
Problems turning	Turns easier in the direction the front casters are trailing. Check wire connections and that both motors are operating.
Steering is not straight	Casters may be bent. Check wire connections and assure that both motors are operating. Check that electric brakes are both engaged.
Will not Freewheel	Check that electric brakes are both disengaged. Check push button on joystick, be sure power is off.

6.0 OPERATIONAL PROBLEMS

Most of the operational "problems" reported to the manufacturer turn out to be related to the batteries. Before reporting a POWER WHEELCHAIR failure, carefully check the following:

Check battery connections: If they are corroded, clean them thoroughly. Make sure there are no nonconductive materials, such as grease, oil, or corrosive build up between the connections, then tighten the connections.

Charge batteries for 12 hours: If, after charging, the above checks appear to be satisfactory but the problem still exists with operation, contact your Gendron dealer.

CHAPTER 6: RAMP DESIGN

1.0 Ramps At Work

For your safety, ramps at work must meet all legal requirements for your area. We recommend:

1.1 Width. At least four feet wide.

1.2 Guardrails. To reduce the risk of a fall, sides of ramp must have raised borders or guardrails at least three inches high.

1.3 Slope Grade. Not more than a 10% slope grade. A 10% slope grade means one foot in elevation for every ten feet of slope length. (See Figure 1. below.)

1.4 Surface. Flat and even, with a thin carpet or other non-skid material. Make sure there are no lips, bumps or depressions.

1.5 Bracing. Ramp must be STURDY. You may need bracing so ramp does not "bow" when you ride on it.

1.6 Avoid A Drop Off. You may need a section at the top or bottom to smooth out the transition.

WARNING: The center of balance of your chair will change while driving on a ramp. Do not turn or change direction. Stay in the center of the ramp, and do not attempt to stop on the ramp.

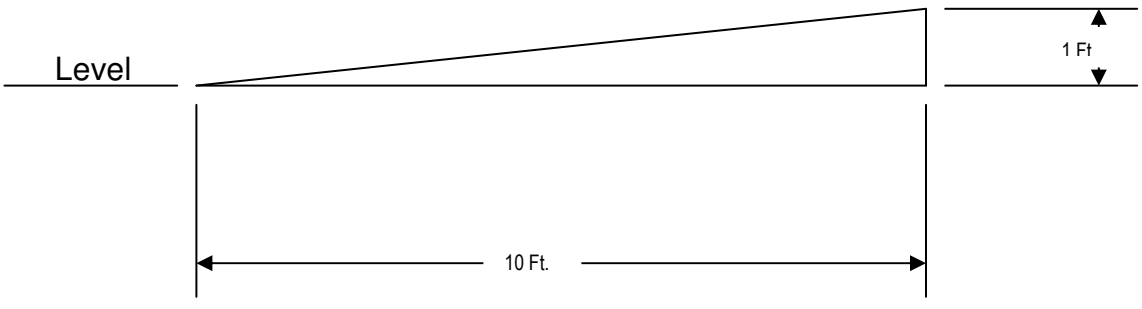


Figure 1. 10% Slope Grade

FEATURES AND SPECIFICATIONS

GENERAL DATA

Ball bearings	8” x 2” Caster Wheel
Sealed lubrication	13” Drive Wheel (Foam-Filled)

5 Amp automatic battery charger – UL Approved

MOTOR/DRIVE MODULE

Voltage:	24 V. DC operating range 18-30 V. DC
Style:	4 pole, brush type, permanent magnet
Speed Forward:	4.0 MPH Maximum
Speed Reverse:	2.0 MPH Maximum
Current:	80-Ampere Maximum (Peak)
Gear Ratio:	18:1
Maximum Grade: (1)	10%
Maximum Weight: (2)	364 kg (800 lbs.) Total - patient and attendant – Model 7700

CONTROL FEATURES

All solid state electronics	Fully proportional joystick control
High efficiency and cool running	Electronic fail or fault monitoring
Electronic indication of battery charge	Electronic current limit
External speed adjustment	Automatic battery isolation while charging

RECOMMENDED BATTERIES

Two 12 volt D.C. Deep Cycle Gel Cell	40 Amp Hours
Battery Size (inches):	9.4w x 5.4d x 9.6h
Approximate weight (pounds):	42 Each
BCI Group size:	22NF/24/24M

Some brands of gel cell, deep cycle batteries include: M-K, Donley, Johnson Controls, Sears, GNB and Interstate. Contact your dealer for a distribution center near you.

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(1) Do not drive your power wheelchair on slick/slippery surfaces of any kind.

(2) Maximum weight includes attendant weight, patient weight and any carry-on item (back pack, oxygen tank holder, luggage, etc.

LIMITED WARRANTY

Gendron, Inc. warrants each “new” REGENCY POWER WHEELCHAIR sold to be free of defects in material and workmanship. The following warranty applies to each of the major modules from date of shipment from Gendron, Inc.:

(1) Joystick/Control Module	(6) Six-month warranty
(2) Motor/Brake/Drive Modules	(1) One-year warranty
(3) Seat, back, wheels, other components	(1) One year warranty
(4) Battery Charger	(1) One year warranty
(5) Frame	(3) Three-year warranty

Control modules, drive units, and battery chargers will be replaced if defective as major service components. The customer will be billed for the replacement unit until the defective unit is returned, at which time credit will be issued. Gendron will pay UPS ground service only to ship the component to the customer. Misuse, negligence, or accident to the Regency Power Wheelchair is not covered in this warranty. Repairs or alterations to the Regency Power Wheelchair will not be covered under warranty unless they have been authorized by Gendron, Inc. Gendron will not be responsible for any labor or material costs resulting from unauthorized repairs. All unauthorized repairs, replacement parts, or modifications may void all warranties.

This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state. This warranty is in lieu of all other warranties, expressed or implied, and is not assignable, nor transferable, by the purchaser.

Freight Damage - The carrier who delivers merchandise to your door is responsible for loss and damages. Acceptance of the shipment by you is acknowledgement that all articles were in good condition and properly packed. Therefore, all claims for loss or damage must be filed immediately with the freight carrier. Should you need assistance with the claim, call our customer service department at 800-537-2521.

Shortages - Check cartons carefully for shortages. Report shortages within 10 days after order receipt.

Return Goods - Within 30 days from date of purchase, returns will be subject to a 15% handling and restocking charge plus any additional costs resulting from damage. After 30 days from date of purchase, Gendron, Inc. reserves the right to not accept returned goods for any reason. If the goods are accepted, the amount of credit will be at the discretion of Gendron, Inc. Returned goods must be in new condition.

Do not return merchandise without prior authorization. All correspondence relating to this warranty must indicate Model Number and Serial Number and be shipped to:

Gendron, Inc.
520 W Mulberry St Suite 100
Bryan, Ohio 43506

WARNING: Radio wave sources may effect powered wheelchair control

Radio wave sources, such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones, can affect powered wheelchairs. Following the warnings listed below should reduce the chance of unintended brake release or powered wheelchair movement which could result in serious injury.

1) Do not turn ON hand-held personal communication devices, such as citizens band (CB) radios and cellular phones, while the powered wheelchair is turned ON;
2) Be aware of nearby transmitters, such as radio or TV stations, and try to avoid coming close to them;
3) If unintended movement or brake release occurs, turn the powered wheelchair OFF as soon as it is safe;
4) Be aware that adding accessories or components, or modifying the powered wheelchair, may make it more susceptible to interference from radio wave sources (Note: There is no easy way to evaluate their effect on the overall immunity of the powered wheelchair); and
5) Report all incidents of unintended movement or brake release to the powered wheelchair manufacturer, and not whether there is a radio wave source nearby.

Important Information

1) 20 volts per meter (V/m) is a generally achievable and useful immunity level against interference from radio wave sources (as of May 1994) (the higher the level, the greater the protection);
2) The immunity level of this product is not known.

CAUTION: IT IS VERY IMPORTANT THAT YOU READ THIS INFORMATION REGARDING THE POSSIBLE EFFECTS OF ELECTRO-MAGNETIC INTERFERENCE ON YOUR POWERED WHEELCHAIR.

Electromagnetic Interference (EMI) From Radio Wave Sources

Powered wheelchairs may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy (EM) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones. The interference (from radio wave sources) can cause the powered wheelchair to release its brakes, move by itself, or move in unintended directions. It can also permanently damage the powered wheelchair's control system. The intensity of the interfering EM energy can be measured in volts per meter (V/m). Each powered wheelchair can resist EMI up to a certain intensity. This is called its "immunity level." The higher the immunity level, the greater the protection. At this time, current technology is capable of achieving at least 20 V/m immunity level, which would provide useful protection from the more common sources of radiated EMI. This powered wheelchair model as shipped, with no further modification. The immunity level of this product is not known.

There are a number of sources of relatively intense electromagnetic fields in the everyday environment. Some of these sources are obvious and easy to avoid. Others are not apparent and exposure is unavoidable. However, we believe that by following the warnings listed below, your risk to EMI will be minimized. The sources of radiated EMI can be broadly classified into three types:

1) Hand-held portable transmitters (transmitters-receivers) with the antenna mounted directly on the transmitting unit. Examples include: citizens band (CB) radios, "walkie talkie", security, fire and police transceivers, cellular telephones, and other personal communication devices. NOTE: Some cellular telephones and similar devices transmit signals while they are ON, even when not being used;
2) Medium-range mobile transceivers, such as those used in police cars, fire trucks, ambulances, and taxis. These usually have the antenna mounted on the outside of the vehicle; and
3) Long range transmitters and transceivers, such as commercial broadcast transmitters (radio and TV broadcast antenna towers) and amateur (HAM) radios. NOTE: Other types of hand-held devices, such as cordless phones, laptop computers, AM/FM radios, TV sets, CD players, and cassette players, and small appliances, such as electric shavers and hair dryers, so far as we know, are not likely to cause EMI problems to your powered wheelchair.

Powered Wheelchair Electromagnetic Interference (EMI)

Because EM energy rapidly becomes more intense as one moves closer to the transmitting antenna (source), the EM fields from hand-held radio wave sources (transceivers) are of special concern. It is possible to unintentionally bring high levels of EM energy very close to the powered wheelchair's control system while using those devices. This can affect powered wheelchair movement and braking. Therefore, the warnings listed below are recommended to prevent possible interference with the control system of the powered wheelchair.

WARNINGS

Electromagnetic interference (EMI) from sources such as radio and TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones, can affect powered wheelchairs. Following the warnings listed below should reduce the chance of unintended brake release or powered wheelchair movement which could result in serious injury.

1) Do not operate hand-held transceivers (transmitters-receivers), such as citizens band (CB) radios, or turn ON personal communication devices, such as cellular phones, while the powered wheelchair is turned ON;
2) Be aware of nearby transmitters, such as radio or TV stations, and try to avoid coming close to them;
3) If unintended movement or brake release occurs, turn the powered wheelchair OFF as soon as it is safe;
4) Be aware that adding accessories or components, or modifying the powered wheelchair, may make it more susceptible to interference from radio wave sources (Note: There is no easy way to evaluate their effect on the overall immunity of the powered wheelchair); and
5) Report all incidents of unintended movement or brake release to the powered wheelchair manufacturer, and note whether there is a radio wave source nearby.

Important Information

1) 20 volts per meter (V/m) is a generally achievable and useful immunity level against interference from radio wave sources (as of May 1994) (the higher the level, the greater the protection);
2) The immunity level of this product is not known.